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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Werenicz et al.

Examiner: J. Aftergut

Serial #: 09/057,406

Group Art Unit: 1722

Filed: April 8, 1998

Docket: 94-36-3-US-D

Official
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GROUP 1700

Title: **METHOD FOR PRODUCING A CONTINUOUS THERMOPLASTIC COATING & ARTICLES CONSTRUCTED THEREFROM**

Honorable Commissioner of Patent
and Trademarks
Washington D.C. 20231

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This paper is in response to the Office Action of 12-14-99.

AMENDMENT

In the specification, at p. 1, line 17 please amend the "References to Related Applications" section to state, "This application is a divisional of serial no. 08/705,578 filed August 29,1996, which is a continuation-in-part of 08/894,500, filed December 12, 1997; which is a 371 of PCT/EP96/00377 filed January 30, 1996 which claims priority to PCT/EP95/00665, filed February 23, 1995.

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RESPONSE

The Applicants would like to thank the Examiner for the courtesy extended to their representative during the interview of December 9, 1999. Per the Examiner's request, a copy of PCT '902 is being submitted concurrently with this response. According to Applicants files, WO 96/25902 was not submitted in an IDS since W0 96/25902 is the publication number of application number PCT/EP96/00377 to which the present application claims priority. The

Applicants' representative noticed that although the priority claim under 35 USC 119 was cited correctly on the filing papers, the chain of priority was not cited correctly in the specification. Thus, the specification was amended appropriately.

Claims 1, 3-6, 8-12, 33, 35-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanftleben et al. in view of Boger et al, for the same reasons as expressed in paper no. 6, paragraph 4. Further, Claims 33, 36, and 38 are rejected under 35 U.S.C. 102(e) as anticipated by or in the alternative, under 35 U.S.C. 103(a) as obvious of Boger et al. for the same reasons as presented in paper no. 6, paragraph 2. The Examiner contends that there is no clear nexus between the device tested in the declaration and the device employed by Boger et al. Specifically, during the interview, the Examiner inquired about the HM 640 applicator mentioned at Column 7, lines 30-33 of the Boger et al. reference. As evidenced by the attached literature, the "HM 640 Applicator" is merely a melt tank and not an "applicator" per se at all. During the interview the Examiner stated that he was familiar with the "Control Coat®" process and believed that the equipment was designed to produce fibers, and not a continuous coating. The Applicants agree with the Examiner and additionally submit that if a hot melt rather than a solvent based material is employed in the apparatus depicted in Boger et al., fibers rather than a continuous coating are also produced. In support of this position, the Applicants would like to direct the Examiner's attention to Appel et al., U.S. 4,720,252, being submitted concurrently with this response. This reference is cited in Boger et al. at column 2, line 64 to column 3, line 7. The Applicants respectfully request that the Examiner compare and note the similarity between the coating apparatuses of Boger et al., Appel et al. and the Control Coat® applicator literature that was supplied to the Examiner during the interview of December 9, 1999. (An additional copy of the Control Coat® is attached.) The Applicants submit that regardless of whether several individual (modular) dies are employed or a single segmented die, the end result is that a thermoplastic material is being forced

through a relatively small orifice with an impinging air flow. (Note the sizes of the slots at Column 8 of Boger et al.) The end result in the case of employing a molten thermoplastic composition is fibers. This fact is consistent with the teaching of Boger et al. since at Column 3, lines 4-7, Boger et al. states that, "Such processes (in referring to 4,720,252) are used for web production or article build up, and do not generally concern themselves with intermittent operation to produce discrete coatings." Thus, Boger et al. acknowledges the processes to be the same since if this process was entirely unrelated, there would be no reason to mention the Appel et al. patent whatsover. It is a technical impossibility that in the absence of any further modifications, essentially the same apparatus produces BOTH a continuous conformal coating and fibers when a hot melt is employed. The Applicants submit that in the absence of solvent the composition does not flow to form a continuous film once applied. The function of the solvent is also acknowledged by Boger at al. at column 1, lines 51-65 as previously discussed. Specifically, " . . . an insulative resin film of uniform thickness, without pinholes if formed from this material as the solvent evaporates on a continuous basis. The Applicants would like to bring to the Examiner's attention that accepting the Applicants position regarding Boger et al. does not affect the validity of this patent since the claims are NOT directed to a hot melt conformal coating, nor is a conformal coating that is applied molten exemplified.

In view of this information and in particular that the Appel et al. reference effectively establishes the nexus between the present day "Control Coat®" process and Boger et al., the Applicants respectfully request reconsideration of the declaration of Dr. Peter Remmers. The Applicants acknowlege that the "Control Coat®" process has evolved to some extent since it was first introduced in the early 90's. The Applicants believe that the initial introduction of Control Coat® utilized a single segmented die. However, the Applicants have been unsuccessful in obtaining literature from that time frame to further support their position. Regarding the declaration, the Examiner contends

that the declaration is not commensurate in scope since the coating was not applied to a circuit board. The Applicants submit that in the absence of solvent, application of a thermoplastic composition according to the teachings of Boger et al. results in the formation of fibers regardless of the substrate that is employed. The Examiner also stated that is was unclear what is meant by "open structure". The Applicants submit that "open structure" clearly refers to something that is NOT a continuous film as claimed in all the independent claims of the present invention. The Applicants are willing to submit an additional declaration per the symantic liking of the Examiner and invite the Examiner to contact their representative to further discuss the appropriate language that is desired.

The Examiner stated that a declaration under 35 CFR 1.132 is not appropriate for overcoming 102 rejections. The Applicants submit that both 102 and 103 rejections were set forth by the Examiner in the Office Action of 6-7-99. However, since the rejections at hand are now solely 103 rejections, this point is now moot.

The Examiner further stated that since the Applicants did not address the teachings of Sanftleben et al, the Applicants agree with the Office's interpretation. The Applicants respectfully disagree. Sanftleben et al. was only relied upon as a secondary reference in combination with Boger et al. Since the Applicants provided a showing, via a declaration, that the method of Boger et al. is inoperable for the sake of producing a continuous film in the case of applying molten hot melt adhesives, combining these references does not overcome the deficiencies of Boger et al. Briefly, Sanftleben et al. also teaches that the composition has a low viscosity when applied. Specifically, at column 4, line 34, it is stated that, "For use as a conformal coating, the coating composition preferably has a viscosity of less than about 1000 cps (10 poise) at its application temperature, with a viscosity of less than about 250 cps (2.5 poise) being preferable when forming thin film conformal coatings." As previously discussed, the present invention prefers that the composition is applied at a temperature such that the complex viscosity at the coating temperature is less

than about 500 poise at about 1000 radians/second and from about 100 poise to about 1,000 poise at about 1 radian/second. At p. 9, line 31 to p. 10 line 4 and p. 12, lines 27-32 of the present application for patent, the Applicants have demonstrated the importance of viscosity to the method of the present invention. Since viscosity is typically a low shear measurement (unless reported otherwise), the preferred compositions of Sanftleben et al. would be unsuitable for use in the present invention.

The Examiner stated that the impinging air flow streams were employed to provide one with the ability to shape the start up and shut off of the coating. The Applicants submit that although the manner is which the air flow is directed does provide to the ability to control the shape of the coating, the inclusion of airflow causes fiberization.

The Examiner reiterated the rejections of Claims 2 and 34 further in view of Reynolds and Claim 7 further in view of E.P. 295,694. In view of Applicants showing regarding Boger et al., the combination of these references does not arrive at the claimed invention.

In conclusion, Boger et al. and the Control Coat® process are directed to essentially the same process as evidenced by the Appel et al. patent. Boger et al. and Appel et al. acknowledge that the apparatus is used to produce fibers when a molten thermoplastic composition is applied with such apparatus. These teachings are consistent with the finding of Dr. Peter Remmers that attests that it was not possible to produce a continuous film at a low coat weight with the Control Coat® process. Since Boger et al. is essentially inoperable for the sake of producing a continuous film with a molten thermoplastic composition, combining Boger et al. with the secondary references does not overcome the deficiencies of Boger et al. Withdrawal of the rejections and timely allowance is respectfully requested.

Respectfully submitted,

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Date

enc: US 4,720,252
Nordson HM 640 Applicator Literature
Nordson Series CC-200 Literature
WO 96/25902